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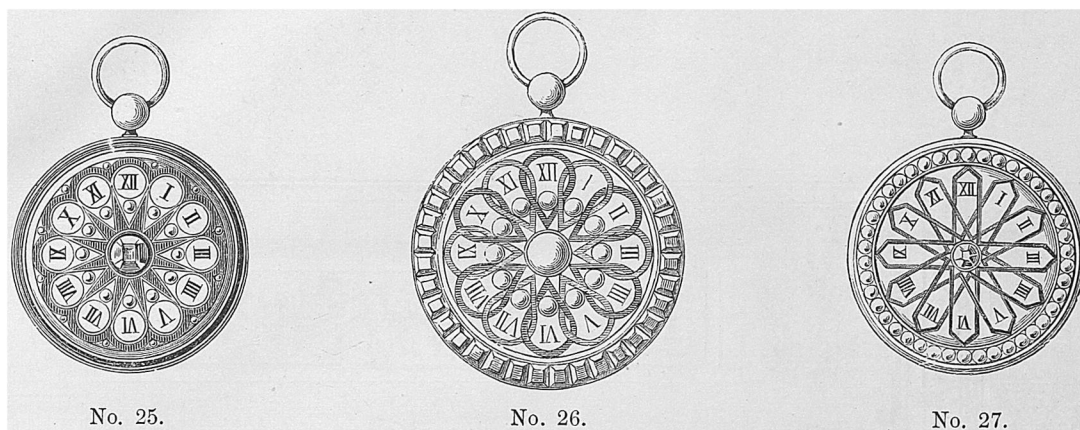
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Nos. 25—27. Lids of Watches, enamelled and set with pearls and diamonds; designed and manufactured by M. Falize aîné, Paris.

VARIOUS.

Artificial Caoutchouc.

Artificial caoutchouc, according to *Les Mondes*, is a chemical compound of gelatine and different substances that produce a homogeneous, elastic body insoluble in volatile mineral and vegetable oils, not attacked by hydrogen gas and offering in consequence many valuable applications in the arts. It could be employed to make pipes for conducting petroleum, benzine, ether, turpentine, also tubes for gas; also moulds for galvanoplastic figures, also as an insulator of electricity, as stopper to bottles, for preservation of eggs, and many other purposes. The price of the article in France is 3 francs the kilo, or 30 cents a pound. Its employment is easy, as it melts in a salt bath, and can be cast in type moulds. After its complete oxydation in the air it becomes more infusible than vulcanized India rubber. Heat and cold have no action upon it. The substance used to render the gelatine insoluble is no doubt chromic acid.

(*Journal of Applied Chemistry.*)

Platinized Glass.

We have been shown a mirror made by coating glass with platinum in a manner analogous to that pursued in silvering glass. The film is so thin as to be transparent when held up to the light, but when covered with black paper is a perfect mirror, reflecting nearly all the light that falls upon it. Mr. Wideman gives, in the *Scientific American*, an account of the new process for platinizing glass from which we condense the following: 100 grammes of clean platinum foil are dissolved by aid of heat in aqua regia composed of 400 grammes nitric acid, and 1,000 grammes pure hydrochloric acid, and the resulting chloride is evaporated to dryness, care being taken not to decompose it by too high a temperature. It is then crushed in a porcelain mortar and laid on a glass grinding plate, when it is mixed with 1,400 grammes of rectified essence of lavender, added in small quantities at a time at a moderate temperature. The mixture is left to stand for eight days; is then decanted and again left in quiet for six days, and at the end of this time filtered. The liquid ought then to show 5° of Baume. This is the platinizing liquid. A second liquid is prepared for the above quantity of chloride of platinum, by taking 25 grammes litharge, 25 grammes borate of lead, and grinding them which 8 to 10 grammes essence of lavender. When required for use the two liquids are poured together and thoroughly mixed.

The perfectly clean glass is placed vertically, and the composition applied by means of a brush, first from bottom to top, then

from left to right, and finally from right to left, so as to give it a perfectly uniform coating. The oily mixture spreads itself instantly over the surface, drying slowly and without running. As soon as the glass plate is sufficiently dry it is placed in muffles, formed of a frame of cast iron, tongued and grooved, and the parts of which slide in each other, and is then heated in furnaces of a peculiar construction. The platinized mirror thus obtained is of great permanency. It resists the action of all atmospheric agencies, and as the reflecting surface is in the front of the glass there is less danger of distortion and an inferior quality of glass can be employed. It is as easy to manufacture curved and round as it is plane mirrors. As the platinized glass is transparent, a person placed in the rear of an office can see everything going on in front of the office without himself being seen. So also at night, when the shutters are closed the windows would become mirrors if coated with platinum in this way. As silver is easily tarnished and platinum is not, the new process will be valuable for all kinds of reflectors. For ghost and shadow pictures, and in philosophical instruments, and in the ophthalmoscope there would seem to be an extensive application for the platinum mirrors.

Zinc Roofing.

A great objection to the use of zinc as a covering for the roofs of houses, in spite of its cheapness and the ease with which the sheets can be applied, is found in the ready oxydation of the metal during wet weather, as well as in the unpleasant glare proceeding from it in sunlight. Both of these difficulties may, however, be obviated by the application of a certain substance, which gives to it a permanent slate color, and at the same time prevents decomposition. This is prepared by heating a porcelain dish one part, by weight, of copper scales, with a mixture of three parts of hydrochloric acid, and one part of sulphuric acid, and continuing the operation until the red vapors cease to be evolved, and until the copper is dissolved. After this sixty-four parts of water are to be added to the green solution, and the whole filtered.

To Clean Marble.

Use white castile soap and water, with the addition of a little ox gall. Acids of all kinds should be avoided as they act upon the marble and destroy it. If the stains are deep, it is well to mix the soap and ox gall with fullers' earth, and cover the marble for a day or two before washing off.